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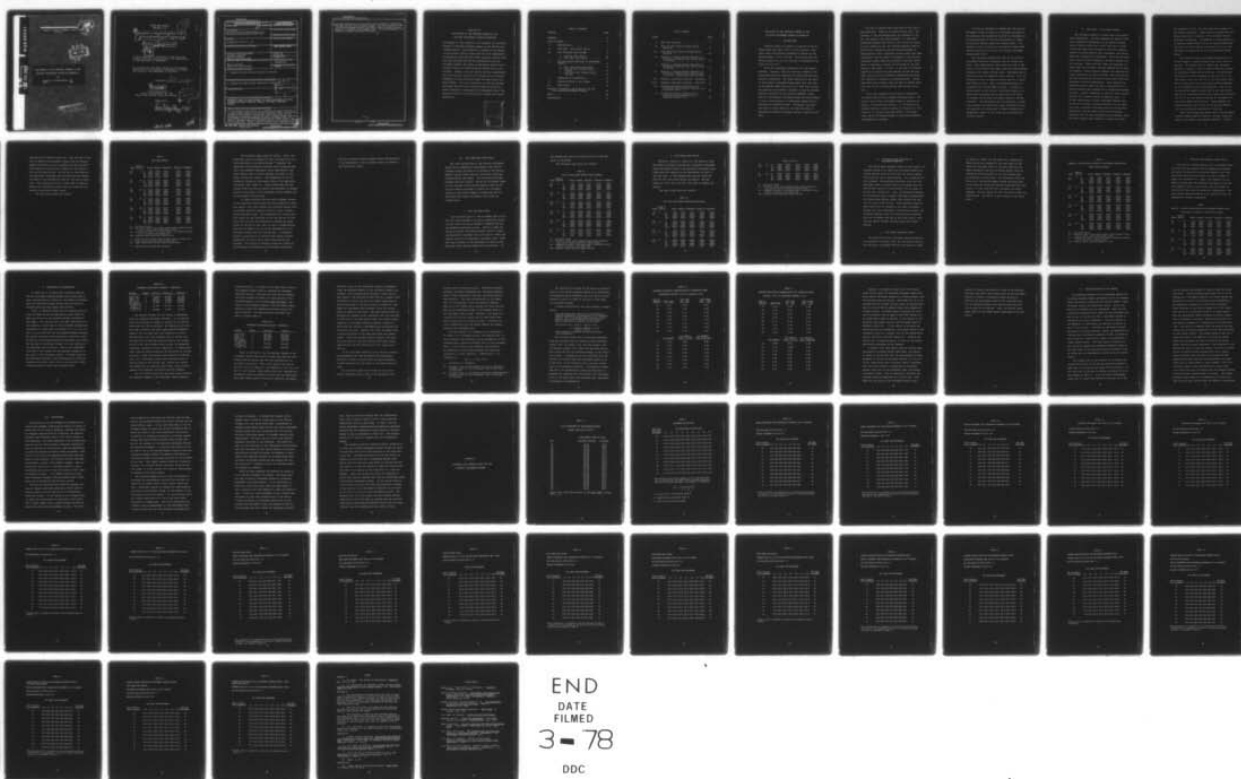JUN 77   G C BRUNNHOEFFER

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MILITARY RETIREMENT SYSTEM ON RETENTION

by

Gilbert C. Brunnhoeffer, III
Major   USA

NAVAL WAR COLLEGE
NEWPORT, R.I.

THE EFFECTS OF THE PROPOSED CHANGES IN THE

MILITARY RETIREMENT SYSTEM ON RETENTION

by

Gilbert C. Brunnhoeffer III
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A paper submitted to the Faculty of the Naval War
College in partial satisfaction of the requirements
of the Department of Management.

The contents of this paper reflect my own personal
views and are not necessarily endorsed by the Naval
War College or the Department of the Navy.

Signature: _____

28 June 1977

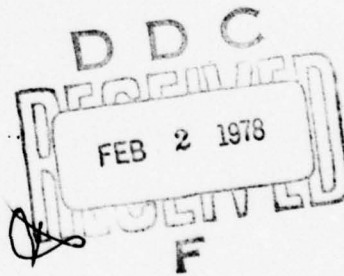Paper directed by
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The purpose of this analysis is to determine the potential effects of the major proposed changes to the Military Retirement System. This analysis is limited to the effects on the military officer corps under the five combinations of percentage reduction and salary averaging formulae that have been proposed for The New Nondisability Military Retirement System. The impact on equivalent salary and retirement benefits of these proposed changes will be significant. However, both the current military compensation and the

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retirement benefits will exceed current civilian standards in these areas even under the most drastic proposed changes. The major conclusion is that the Military Retirement System is not flexible enough to permit personnel managers to accomplish their management goals. The proposed changes to the system do not promise any greater flexibility.

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I. INTRODUCTION

"Pensions alone will absorb 8.5 percent of the de-
fense budget this year (FY77), or $8.4 billion. Only
twelve years ago pensions consumed 2.5 percent of the
defense budget, or $1.2 billion. By the year 2000 the
annual pension bill for the military is projected to be
about $34 billion."[1]

These are frightening statistics for the average
taxpayer. Moreover, they are cited by a member of the
House Armed Services Committee who should and does have
accurate information. The sheer magnitude of the costs
in the military retirement system makes this line item
in the defense budget ripe for cuts. With this in mind,
the question often asked in Congress is what do military
pensions contribute to the national defense? Propo-
nents of the military retirement system are hard pressed
to give a quantitative or a qualitative answer that is
supported by measurable facts. Conversely, the ques-
tion that is rarely asked is, are the data cited in
Representative Aspin's statement really a source of con-
cern?

The rise in pension costs from FY65 to FY77 was indeed sevenfold. There is no disputing that fact. The increase in real purchasing power, as reflected in the CPI, was slightly less than fourfold.[2] If the trend established between FY65 and FY77 was allowed to continue until FY2000 the bill for military pensions would be $350 billion instead of the $34 billion promised by Representative Aspin. Therefore, one may infer that something other than the types of increases in the military retirement system that have occurred in the last twelve years is expected to operate on the system in the next twenty or more years. In fact, if the rate of inflation exceeds 6.27 percent per year between now and the year 2000, the $34 billion promised by Representative Aspin will represent a decrease in purchasing power. Recent experience with inflation does not make an annual inflation rate of six to seven percent seem totally out of line.

Three facts emerge from the quote by Representative Aspin and the brief analysis presented above. The size of the military retirement system is large by any measure of Congressional funding. If the military retirement system is acted on solely by inflation, in the future it is likely to get much larger. This large line item in the defense budget is attracting attention from members of Congress.

It would be reasonable to assume that the military retirement system is going to be seriously reviewed by the executive and legislative branches of government on a continuing basis to find any way possible to reduce its size and thereby reduce the federal budget. The question is not if cuts are to be made but rather when and how large are the cuts in the military retirement system going to be?

The following analysis will look at the military retirement system as a retention tool for career soldiers. More specifically, this study will look at the effect of the present retirement system and the proposed changes on the career officer corps. Retirement pay is given after one has completed active service. It is an incentive for one to remain on active duty for a specified length of time. Thus, the promised pension is a retention tool for the armed services. By placing a dollar amount on the value of a military pension it is hoped that conclusions can be drawn about the effect of changing the military retirement system on officer retention. The conclusions will be tentative, at best, since surveys and projections cannot accurately predict the behavior of a group when it comes to making such a fundamental change in life direction as quitting the military service.

II. BASE CASE - The Present System

The following analysis is based upon a few simpli-
fying assumptions. The most important of these is that
total equivalent compensation is the amount of money
that an officer would have to earn each year in order
to have the same money available to him after federal
taxes as he would when his pay, allowances, and retire-
ment fund increment are considered. The state and local
taxes, social security payments, and death benefits are
not included. State and local taxes are neglected be-
cause there are virtually infinite combinations of them
to consider. Social security payments are neglected be-
cause, except for the junior officer, they would affect
military compensation the same as they would affect the
equivalent civilian compensation. Death benefits are
neglected because these are part of the officer's in-
surance planning and everyone has a different philosophy
and plan. Another assumption is that all other military
benefits are counted as worth no monetary value. An
officer whose spouse is given inadequate medical care
or who has not seen a military physician in four years
will have a radically different value for the military
health care from one whose child has had extensive
intensive care for some congenital health problem. Often
the local economy sells things at a lower price than

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the commissary or PX. The craft shop has no appeal to the bowling enthusiast. These types of reasons make the dollar equivalent of benefits of the military service difficult to quantify. The approach in this analysis is to quantify those things that can be readily quantified and leave the other aspects of military life up to the individual to assign his or her own equivalent dollar amount.

The present military retirement system gives the service member a vested interest after twenty years of service. The formula used to compute the retirement benefits is based on the last month's base pay received by the service member before retiring. The percentage received by the service member is equal to 50% of the last month's base pay plus 2½% of the last month's base pay for every year over twenty years service completed up to a maximum of thirty years service. Thus the retiring service member receives 50% of the last month's base pay if retirement occurs after twenty years service and 75% of the last month's base pay if retirement occurs after thirty years service. These payments are received monthly for the rest of the service member's life and periodically adjusted for inflation.

Under this formula the amount that a service member receives depends upon his years of service, final pay grade at retirement, and expected longevity. Table A

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gives the life expectancy of nondisabled officers based on their age in 1977. The life expectancies from Table A are used in Table B to give the required equivalent annual retirement fund contribution factor. These factors, when multiplied by the percentage of the final base pay received for retirement (expressed in dollars), give the annual required contribution by DOD that will generate a fund necessary to provide for the service member's expected retirement payments. Of course no such fund exists at present but, in the attempt to quantify the worth of the retirement system to the service member, the device of a retirement fund is used to show the relative changes that the proposed revisions of the military will make.

The data in Table A and Table B allow one to use the pay tables and compute the yearly retirement fund contribution, the equivalent retirement fund, and the present value at the twentieth year in service of the equivalent retirement fund. These quantities are displayed in Table C, Table D, and Table E, respectively. The tables are worked out for specific ages; i.e., entry on active duty at ages 17, 21, and 25. This approach gives a range of values that can be interpolated or extrapolated to give an estimate for any age at entry on active duty.

For instance, the yearly retirement contribution, the equivalent retirement fund, and the present value (twentieth year) of the equivalent retirement fund for a forty-five-year-old lieutenant colonel with twnety years of service on July 1, 1977, who expects to retire as a colonel with twenty-five years service can be determined from the tables. From Table C-3, Table D-3, and Table E-3 the figures mentioned above are $3268, $206,700, and $147,400, respectively. These quantities are expressed in 1977 dollars.

In order to get a broader perspective on the value of the military retirement system the base case will be developed for six officers who hold six different grades with appropriate lengths of service for each. The point in time considered will be July, 1977. The ranks chosen are second lieutenant, captain, major, lieutenant colonel, colonel, and brigadier general. These ranks were chosen because they are held by the officers targeted for retention by DOD or they are within the range of aspirations of the officers targeted for retention by DOD.[3]

The method used to evaluate military salary for the base case and the potential modifications to the retirement system is to compute the service member's net pay after adding base pay, basic allowance for subsistence (BAS), and basic allowance for quarters (BAQ) and

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subtracting the federal income tax. This net pay is then used to compute the equivalent salary that the service member would have to earn to produce the same net pay.[4] This equivalent salary gives a measure of the worth of the tax free BAQ and BAS. The net pay is then added to the equivalent retirement fund contribution and accrued interest[5] on the hypothetical fund for the year in question. This augmented net pay is then used to compute a second total equivalent salary that will yield the augmented net pay after federal taxes.

The table below gives the results:

TABLE I

BASE CASE SALARIES

GRADE	YEARS OF SERVICE	*	SINGLE	MARRIED	MARRIED+1**	MARRIED+2	MARRIED+3
2LT	1-	N	9599	10381	10533	10695	10850
O-1		ES	10900	11600	11625	11675	11650
		AN	13333	14115	14267	14429	14584
		AES	15925	16250	16200	16200	16200
CPT	8+	N	16122	17282	17447	17612	17777
O-3		ES	20100	20300	20300	20300	20300
		AN	22538	23698	23863	24027	24193
		AES	30655	29575	29400	29300	29200
MAJ	11+	N	17619	18922	19110	19284	19449
O-4		ES	22400	22650	22600	22550	22500
		AN	25479	26780	26970	27144	27309
		AES	35975	34550	34450	34300	34200
LTC	17+	N	20922	22600	22810	23020	23208
O-5		ES	27800	28000	27950	27900	27800
		AN	32717	34395	34605	34815	35003
		AES	50500	48250	48000	47700	47400
COL	22+	N	24834	27094	27334	27574	27814
O-6		ES	34800	35100	35000	34950	34850
		AN	31435	33694	33934	34174	34414
		AES	47900	46900	46700	46450	46250
BG	25+	N	28828	31741	32039	32331	32617
O-7		ES	42750	43250	43150	43050	42950
		AN	35628	38546	38839	39131	39417
		AES	56350	56550	56400	56250	56050

N   - net annual salary

ES - equivalent salary (fully taxable annual salary required to give
        the net annual salary after federal taxes)

AN - augmented net salary = net annual salary + retirement contribu-
        tion + interest on retirement fund

AES - augmented annual equivalent salary (see ES)

*   - Years of Service denotes years of active duty as of July 1977.

1- - Means less than one full year of active duty.

8+ - Means between eight and nine years of active duty.

** - Married+1 means married with one child.

The preceding paper shows two things. First, the equivalent salary is competitive with the majority of salaried positions in the United States.[6] Secondly, the equivalent salary steadily increases with increasing rank while the augmented equivalent salary experiences a dip after twenty years of service between the ranks of lieutenant colonel and colonel. This phenomenon can be explained by looking at the present value of the equivalent retirement funds (Table E). These tables show that for certain ranks and time in service the Department of Defense actually saves money in the retirement fund by keeping the service member on active duty.

It seems plausible that the service member focuses on the equivalent salary during the early phases of a military career. This would explain why a married captain with no children would not perceive that he or she is really earning $28,900 a year. The uncertainty of a future military career and the realities of the real net pay in hand would tend to force the perception of earning an annual salary of $20,300 or less. The "or less" is added because most service members are not really appreciative of the advantage flowing from free BAQ and BAS. A lieutenant colonel is much easier to convince that annual earnings approximate $47,700 if he or she is married with two children. The reality of actually living on a salary of $27,900 makes the acceptance of the higher figure hard

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but the lieutenant colonel probably knows intellectually,
if not emotionally, that the higher figure is closer to
the real annual salary.

III.   HIGH ONE/THREE YEAR OPTION

The first modification to the military retirement
system to be considered is the proposal that the re-
tirement formula be based on an average of the service
member's salary rather than the last month's base pay
received before retirement. Two variations have been
proposed from this option: basing the retirement formu-
la on an average of the service member's base pay for
the year before retirement or basing the retirement
formula on the service member's average base pay for
the three years before retirement. Both cases are
treated below.

A.   HIGH ONE YEAR OPTION

The retirement pay of a service member does not af-
fect the service member's net pay or equivalent salary.
It does affect the service member's augmented net pay
and augmented equivalent salary. Table F-1 shows the
annual retirement fund contributions, Table F-2 shows
the equivalent retirement fund, and Table F-3 shows the
present value of the equivalent retirement fund. These
data were computed in the same manner as those of the
base case using the pay tables for FY76 and FY77. It

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was assumed that each pay grade was held for the year
prior to retirement.

The following table gives the results:

TABLE II

HIGH ONE YEAR SALARY AVERAGE OPTION SALARIES

GRADE	YEARS OF SERVICE		SINGLE	MARRIED	MARRIED+1	MARRIED+2	MARRIED+3
2Lt	1-	N	9599	10381	10533	10695	10850
O-1		ES	10900	11600	11625	11675	11650
		AN	13192	13974	14126	14288	14443
		AES	15925	15950	15950	15875	15825
CPT	8+	N	16122	17282	17447	17612	17777
O-3		ES	20100	20300	20300	20300	20300
		AN	22295	23455	23260	23785	23950
		AES	30100	29200	29000	28775	28650
MAJ	11+	N	17619	18922	19110	19284	19449
O-4		ES	22400	22650	22600	22550	22500
		AN	25182	26485	26673	26847	27012
		AES	35350	34000	33900	33600	33400
LTC	17+	N	20922	22600	22810	23020	23208
O-5		ES	27800	28000	27950	27900	27800
		AN	32272	33950	34160	34370	34558
		AES	49800	47250	47000	46600	46200
COL	22+	N	24834	27094	27334	27574	27814
O-6		ES	34800	35100	35000	34950	34850
		AN	41934	44194	44434	44674	44914
		AES	68850	67700	68235	67025	66675
BG	25+	N	28828	31741	32039	32331	32617
O-7		ES	42750	43250	43150	43050	42950
		AN	35528	38441	38739	39031	39317
		AES	56050	56200	56000	55750	55500

N   - Net annual salary
ES - Equivalent salary (fully taxable annual salary required to
        give the net annual salary after federal taxes)
AN - Augmented net salary = net annual salary + retirement contri-
        bution + interest on retirement fund
AES - Augmented annual equivalent salary (see ES)

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B. HIGH THREE YEAR OPTION

Similarly, Table G-1, Table G-2, and Table G-3 show
the annual retirement contribution, equivalent retirement
fund, and present value of the equivalent retirement fund.
These data were computed in the same manner as those in
the base case. It was assumed that each pay grade was
held for the three years before retirement. The pay
tables for FY75, FY76, and FY77 were used to compute the
tables.

The table below gives the results:

TABLE III

HIGH THREE YEAR SALARY AVERAGE OPTION SALARIES

GRADE	YEARS OF SERVICE		SINGLE	MARRIED	MARRIED+1	MARRIED+2	MARRIED+3
2LT	1-	N	9599	10331	10533	10695	10850
O-1		ES	10900	11600	11625	11675	11650
		AN	12985	13767	13919	14081	14236
		AES	15600	15725	15650	15600	15550
CPT	8+	N	16122	17282	17447	17612	17777
O-3		ES	20100	20300	20300	20300	20300
		AN	21940	23100	23265	23430	23595
		AES	29500	28600	28400	28300	28100
MAJ	11+	N	17619	18922	19110	19284	19449
O-4		ES	22400	22650	22600	22550	22500
		AN	24746	26049	26237	26411	26576
		AES	34600	33000	33100	33000	32600
LTC	17+	N	20922	22600	22810	23020	23208
O-5		ES	27800	28000	27950	27900	27800
		AN	31618	33296	33506	33716	33904
		AES	48200	46000	45500	45500	45000

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TABLE III (Cont.)

COL	22+	N	24834	27094	27334	27574	27814
O-6		ES	34800	35100	35000	34950	34850
		AN	36834	39094	39334	39574	39814
		AES	58600	57500	57100	56825	56475
BG	25+	N	28828	31741	32039	32331	32617
O-7		ES	42750	43250	43150	43050	42950
		AN	35328	38241	38539	38831	39117
		AES	55650	55800	55500	55350	55100

N   - Net annual salary
ES - Equivalent salary (fully taxable annual salary required to
        give the net annual salary after federal taxes)
AN - Augmented net salary = net annual salary + retirement contri-
        bution + interest on retirement fund
AES - Augmented annual equivalent salary (see ES).

IV. FIFTEEN PERCENT REDUCTION IN
RETIREMENT BENEFITS

The second major proposed change to the military re-
tirement system is to reduce the retirement benefits by
fifteen percent until the time when the service member
would have had thirty years service. As a sweetener for
this proposal, the percentage increment given for each
additional year of service would be increased from two
and one-half percent to three percent for all years of
service over twenty-four. Thus, the maximum percentage
of the base pay used to compute retirement payments would
be seventy-eight percent rather than seventy-five per-
cent at thirty years service. This proposed change has
been linked with the changes in the basic retirement
formula that were discussed in the previous section. The
following analyses cover the fifteen percent reduction
with the retirement base pay as the final salary, high
one year salary average, and high three year salary
average.

A. LAST SALARY RECEIVED OPTION

The equivalent yearly retirement fund contribution,
the equivalent retirement fund, and the present value of
the equivalent retirement fund for this option is shown

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in Table H-1, Table H-2, and Table H-3, respectively. These tables were computed in the same manner as the tables for the same values in the base case with the added assumption that any retirement benefit would be reduced by fifteen percent of the last monthly base pay received on active duty. This reduction could continue until the service member reached the point when thirty years of active duty service would have been completed. At that time the full retirement pay would commence. The pay tables for FY77 were used to make the computations. The effect on pay is given in the table below.

TABLE IV

SALARIES - FIFTEEN PERCENT REDUCTION IN RETIREMENT PAYMENTS UNTIL

THIRTY YEARS IN SERVICE

GRADE	YEARS OF SERVICE		SINGLE	MARRIED	MARRIED+1	MARRIED+2	MARRIED+3
2Lt	1-	N	9599	10381	10533	10695	10850
O-1		ES	10900	11600	11625	11675	11650
		AN	12715	13497	13649	13811	13966
		AES	15125	15375	15300	15225	15150
CPT	8+	N	16122	17282	17447	17612	17777
O-3		ES	20100	20300	20300	20300	20300
		AN	21476	22636	22801	22966	23131
		AES	28650	27925	27775	27600	27450
MAJ	11+	N	17619	18922	19110	19284	19449
O-4		ES	22400	22650	22600	22550	22500
		AN	24178	25481	25669	25843	26008
		AES	33525	32350	32150	31950	31800
LTC	17+	N	20922	22600	22810	23020	23208
O-5		ES	27800	28000	27950	27900	27800
		AN	30765	32443	32653	32863	33051
		AES	46525	44400	44100	43800	43550
COL	22+	N	24834	27094	27334	27574	27814
O-6		ES	34800	35100	35000	34950	34850
		AN	34234	36494	36734	36974	37214
		AES	53500	52300	51975	51625	51350
BG	25+	N	28828	31741	32039	32331	32617
O-7		ES	42750	43250	43150	43050	42950
		AN	42828	45741	46039	46331	46617
		AES	70650	70800	70575	70350	70100

N   - Net annual salary

ES - Equivalent salry (fully taxable annual salary required to give
      the net annual salary after federal taxes)

AN - Augmented net salary = net annual salary + retirement contribu-
      tion + interest on retirement fund

AES - Augmented annual equivalent salary (see ES)

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B. HIGH ONE YEAR AVERAGE SALARY OPTION

The case of a fifteen percent cut in retirement bene-
fits with the base salary used for computing retirement
pay being the average of the service member's last high
year salary while on active duty is given in Table I-1,
Table I-2, and Table I-3. Again, full benefits are as-
sumed to resume upon the thirtieth anniversay of the ser-
vice member's entry on active duty. The pay tables for
FY76 and FY77 were used in making the computations. The
table below shows the effects on the salaries of the six
hypothetical officers considered.

TABLE V

SALARIES - FIFTEEN PERCENT REDUCTION IN RETIREMENT PAYMENTS UNTIL

THIRTY YEARS IN SERVICE - HIGH ONE YEAR FORMULA

GRADE	YEARS OF SERVICE		SINGLE	MARRIED	MARRIED+1	MARRIED+2	MARRIED+3
2Lt	1-	N	9599	10381	10533	10695	10850
O-1		ES	10900	11600	11625	11675	11650
		AN	12597	13379	13531	13693	13848
		AES	14975	15200	15175	15150	15100
CPT	8+	N	16122	17282	17447	17612	17777
O-3		ES	20100	20300	20300	20300	20300
		AN	21273	22433	22598	22763	22928
		AES	28325	27625	27475	27325	27150
MAJ	11+	N	17619	18922	19110	19284	19449
O-4		ES	22400	22650	22600	22550	22500
		AN	23929	25232	25420	25594	25759
		AES	33075	31950	31775	31575	31350
LTC	17+	N	20922	22600	22810	23020	23208
O-5		ES	27800	28000	27950	27900	27800
		AN	30392	32070	32380	324900	32678
		AES	45775	43675	43400	43100	42750

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Table V (cont.)

COL	22+	N	24834	27094	27334	27574	27814
O-6		ES	34800	35100	35000	34950	34850
		AN	42534	44794	45034	45274	45514
		AES	70075	68900	68575	68225	67900
BG	25+	N	28828	31741	32039	32331	32617
O-7		ES	42750	43250	43150	43050	42950
		AN	42628	45541	45839	46131	46417
		AES	70275	70400	70175	69950	69700

N   - Net annual salary
ES - Equivalent salary (fully taxable annual salary required to
        give the net annual salary after federal taxes)
AN - Augmented net salary = net annual salary + retirement contribu-
        tion + interest on retirement fund
AES - Augmented annual equivalent salary (see ES)

C.   HIGH THREE YEAR AVERAGE SALARY OPTION

The case of the same fifteen percent reduction with
the retirement benefits being based on the service member's
last high three year average salary while on active duty
is given in Table J-1, Table J-2, and Table J-3. The pay
tables for FY75, FY76, and FY77 were used for the computa-
tion and full benefits are assumed to resume on the thir-
tieth anniversary of the service member's entry on active
duty. The table below shows the effect on the salaries of
the six hypothetical officers.

TABLE VI

SALARIES - FIFTEEN PERCENT REDUCTION IN RETIREMENT PAYMENTS UNTIL

THIRTY YEARS IN SERVICE - HIGH THREE YEARS FORMULA

GRADE	YEARS OF SERVICE		SINGLE	MARRIED	MARRIED+1	MARRIED+2	MARRIED+3
2Lt	1-	N	9599	10381	10533	10695	10850
O-1		ES	10900	11600	11625	11675	11650
		AN	12424	13206	13358	13520	13675
		AES	14750	15025	14975	14825	14875
CAPT	8+	N	16122	17282	17447	17612	17777
O-3		ES	20100	20300	20300	20300	20300
		AN	20976	22136	22301	22466	22631
		AES	27825	27200	27050	26850	26700
MAJ	11+	N	17619	18922	19110	19284	19449
O-4		ES	22400	22650	22600	22550	22500
		AN	23565	24868	25056	25230	25395
		AES	32400	31400	31200	31000	30800
LTC	17+	N	20922	22600	22810	23020	23208
O-5		ES	27800	28000	27950	27900	27800
		AN	29846	31524	31734	31944	32132
		AES	44700	42700	42400	42100	41800
COL	22+	N	24834	27094	27334	27574	27814
O-6		ES	34800	35100	35000	34950	34850
		AN	37837	40094	40334	40574	40814
		AES	60675	59500	59175	58825	58500
BG	25+	N	28828	31741	32039	32331	32617
O-7		ES	42750	43250	43150	43050	42950
		AN	42128	45041	45339	45631	45917
		AES	69250	69400	69175	68950	68700

N   - Net annual salary
ES - Equivalent salary (fully taxable annual salary required to give
        the net annual salary after federal taxes)
AN - Augmented net salary = net annual salary + retirement contribu-
        tion + interest on retirement fund
AES - Augmented annual equivalent salary (see ES)

V.   COMPARISON OF ALTERNATIVES

A comparison of the Base Case retirement benefits
and the five major proposed changes can be made from at
least two perspectives. Those are, the effect on officers
with less than twenty years service and the effect on
officers with more than twenty years service.

First, it should be noted that all officers will re-
ceive the same net pay and equivalent salary under the
base case and any of the proposed changes discussed in
this paper. For officers with less than twenty years ac-
tive service, a quick look at the retirement contribution
from Table C-2 (base case) and Tables F-1, G-1, H-1, I-1,
and J-1, will show that all the proposed changes decrease
the annual retirement fund contribution required to give
the officer the retirement benefits associated with attain-
ing the rank of lieutenant colonel (O-5) and retiring in
the twentieth year of service. This is not surprising
since one of the reasons for the proposed changes is to
cut costs in the retirement system. A logical result of
the decreased retirement fund contributions is that the
augmented equivalent salary will be less as well. Table
I through Table VI reveal the following data:

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TABLE VII

AUGMENTED EQUIVALENT SALARIES - MARRIED+2

SYSTEM	TABLE	CPT(O-3)	MAJ(O-4)	LTC(O-5)
Base Case	1	29,300	34,300	47,700
High 1 Yr	2	28,775	33,600	46,600
High 3 Yr	3	28,300	33,000	45,500
15% Reduct.	4	27,600	31,950	43,800
15% Reduct/ High 1 Yr	5	27,325	31,575	43,100
15% Reduct/ High 3 Yr	6	26,850	31,000	42,100

The options in Table VII are listed in descending order of augmented equivalent salaries. It is apparent that the percentage of change is greater as the officer gains rank and time in service. By focusing on the loss one tends to look at the hole rather than the doughnut, however. For the worst case (15% reduction in retirement benefits until the thirtieth year of service with the base pay for figuring benefits taken as the average salary of the three highest years of pay) the augmented equivalent salaries are still impressive. A captain with eight years of service receives the equivalent of $26,850 per year, a major with eleven years receives $31,000 per year, and a lieutenant colonel with seventeen years of service receives $42,100 per year. Taking into account the probability of attaining these ranks, these salaries compare very favorably to salaries paid by industry.

For the officers with more than twenty years service, the proposed changes in the retirement system present a

different picture. As shown in the table below, each of the proposed changes tends to increase the augmented equivalent salary. The base case salaries are competitive with industry as shown by a casual glance at the job advertisements in the Sunday New York Times. The effect of the proposed changes to the retirement system would be to make the augmented equivalent salary even more attractive. The table below is extracted from Table I through Table VI.

TABLE VIII

AUGMENTED EQUIVALENT SALARY - MARRIED+2

SYSTEM	TABLE	COL(O-6)	BG(O-7)
Base Case	1	$46,450	$55,750
High 1 Yr	2	$67,025	$55,750
High 3 Yr	3	$56,825	$55,350
15% Reduct.	4	$51,625	$70,350
15% Reduct/ High 1 Yr	5	$68,225	$69,950
15% Reduct/ High 3 Yr	6	$58,825	$68,950

Thus, on the face of it, the proposed changes in the retirement system tend to shift income away from the first twenty years of service and into the twentieth year to thirtieth year period. This is not exactly the case as one will notice if Table D-2, and Tables F-2, G-2, H-2, I-2, and J-2, are checked. These tables show that, although the incremental value of staying on active duty for additional years past twenty years of service is generally increased,

the total value of the retirement annuity is decreased

under the proposed changes in the retirement system. For

instance, the retirement fund increases, under the pre-

sent system, from $194,200 to $201,700 for a colonel (O-6)

who stays on active duty from his twenty-second year to

thirty-third year of service as shown in Table D-2. This

makes his retirement fund increment to his net salary

equal to $7500 for that year. The same officer would ex-

perience an increase in his retirement fund from $169,000

to $178,400 for the same period under the fifteen percent

reduction in retirement benefits proposal (Table H-2).

This gives the officer a retirement fund contribution of

$9,400 for the year. However, his total retirement fund

is worth only 88.4% of the same fund under the present

system. Thus each proposed change decreases the finan-

cial well being of both the officers with under twenty

years service and the officers with over twenty years

service.

If the retirement system is to be used as a person-

nel management tool with the purpose of encouraging

officers to remain on active duty as long as possible,

a third perspective of the worth of the system comes to

light.

As an officer looks at the future of his or her

career, promotions play a part in the attitude of the

officer toward continued service. Promotions generally represent increased responsibility, increased prestige, better living conditions, more pay, and larger retirement benefits. This last consideration is not always what it seems because of the time element involved. There is a very simple way to account for this time element in the retirement system if the present value of the retirement fund is used. Generally, the value of a promotion to the next higher rank at some future date can be quantified in at least two ways. Both ways involve probabilities and the tables showing the present value of the retirement fund.

For the prospect of a promotion to be profitable in terms of the retirement system, the expected gain in the retirement fund multiplied by the probability of the promotion must exceed the expected loss in the retirement fund, if the officer is not promoted, multiplied by the probability of not being promoted (one minus the probability of being promoted). Symbolically, it is expressed as:

$$(EG) \; p \; = \; -(EL) \; (1-p)$$

p = probability of promotion

EG = (Present value of retirement fund after promotion) - (Present value of the retirement fund at the time of decision)

EL = (Present value of retirement fund after non-promotion) - (Present value of the retirement fund at the time of decision)

The decision can be made in the light of selection rates for the latest promotion boards or by determining the probabilities of promotion that will give an indifference of choice in terms of the gain or loss under the retirement system.

A simple calculation of the latter method is shown below:

> From the Base Case, Table E-2, the minimum acceptable probability of promotion of a lieutenant colonel (O-5) with twenty years service to the rank of colonel (O-6) prior to the officer's twenty-third year of service is given as:
>
> $$(153.6^*-153.1)p = (153.1 - 145.7) (1-p)$$
>
> $$p = \frac{(153.1 - 145.7)}{(153.6 - 145.7)} = 0.937$$
>
> *This assumes a two-year service obligation after promotion.

The following tables give the minimum acceptable promotion probabilities for promotion from lieutenant colonel (O-5) to colonel (O-6) and from colonel (O-6) to brigadier general (O-7) under the Base Case retirement system and the five proposed changes to the retirement system. A probability of zero indicates that the officer will profit under the retirement system if he or she waits to the indicated year of service regardless of the promotion prospects. A probability greater than unity (an impossibility under the definition of probability) indicates that the officer will lose money if he or she waits until the indicated year, regardless of promotion or nonpromotion.

TABLE IX

MINIMUM ACCEPTABLE PROBABILITIES OF PROMOTION FROM

LIEUTENANT COLONEL (O-5) TO COLONEL (O-6)

YRS OF SERVICE	BASE CASE	HIGH ONE YR AVG	HIGH THREE YRS AVG
21	0.33	0.00	0.00
22	0.49	0.23	0.29
23	0.94	0.77	0.32
24	0.65	1.04	0.91
25	0.96	0.73	0.99
26	1.30	1.07	1.14
27	1.74	1.48	1.29
28	2.29	1.99	1.80

	15% REDUCT	15% REDUCT/ HIGH 1 YR AVG	15% REDUCT/ HIGH 3 YRS AVG
21	0.00	0.00	0.00
22	0.00	0.00	0.00
23	0.00	0.00	0.00
24	0.04	0.00	0.00
25	0.09	0.00	0.00
26	0.16	0.02	0.00
27	0.26	0.10	0.00
28	0.37	0.20	0.00

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TABLE X

MINIMUM ACCEPTABLE PROBABILITIES OF PROMOTION FROM

COLONEL (O-6) TO BRIGADIER GENERAL (O-7)

YRS OF SERVICE	BASE CASE	HIGH ONE YR AVG	HIGH THREE YRS AVG
21	0.11	0.09	0.00
22	0.00	0.21	0.14
23	0.18	0.15	0.10
24	0.44	0.42	0.19
25	0.72	0.74	0.19
26	1.10	1.03	0.51
27	2.19	2.14	0.78
28	3.82	3.78	1.47

	15% REDUCT	15% REDUCT/ HIGH 1 YR AVG	15% REDUCT/ HIGH 3 YRS AVG
21	0.003	0.00	0.00
22	0.00	0.008	0.00
23	0.00	0.00	0.00
24	0.00	0.00	0.00
25	0.00	0.00	0.00
26	0.00	0.00	0.00
27	0.00	0.00	0.00
28	0.00	0.00	0.00

Consider a lieutenant colonel (O-5) with twenty years service under the proposed retirement system that would reduce retirement benefits by fifteen percent until the thirtieth year of service. From Table IX, it is indicated that the officer can wait until the twenty-third year of service with no penalty under this proposed retirement system. At twenty years of service the officer's retirement fund is equal to $127,700 (Table H-3). At twenty-three years of service, if the officer is not promoted, the present value of the retirement fund is $128,800 (Table H-3). If the officer is promoted and serves the two year obligation, the present value of the retirement fund for a colonel (O-6) in the twenty-fifth year of service is $141,700 (Table H-3). Clearly the officer has a winning situation in terms of the retirement system regardless of the outcome.

A colonel (O-6) with twenty years of service under the present retirement system (Base Case), may decide to remain on active duty with the anticipation of being promoted to the rank of brigadier general (O-7) by his or her twenty-sixth year of service. Table X indicates that this would require a probability of promotion greater than unity to be profitable under the present retirement system. This is impossible, therefore the strategy would be classified as a no win case. From Table E-2 the value of the retirement fund for the

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colonel at twenty years service is seen to be $169,200.

From the same table, the present value of the retirement

fund for a colonel at twenty-six years service is

$159,700 and the present value of the retirement fund

for the brigadier general with twenty-eight years ser-

vice is seen to be $168,300. Thus, the officer loses

money under the retirement system regardless of the pro-

motion.

VI. POSSIBLE EFFECTS OF THE CHANGE

The preceding analysis of the retirement system and the major proposed changes concentrate on how the changes affect the amount of money due the service member's total retirement annuity and equivalent salary. Actual cash flow upon retirement was not considered. There are two reasons for neglecting this feature of the retirement system. First, it is the fact that a retirement annuity is offered at all that is important. The exact amount is not important in influencing the decision of whether or not to retire early. A decrease in the amount offered may affect the timing, however. Second, the population of officers that *DOD would be expected to want to remain on* active duty are those who are capable of establishing a *viable second career.* This same group of officers are very likely to examine any proposed retirement system in the same light as the preceding analysis because it will be looked upon as supplementary income during the second career.

The example used in the analysis of an officer who entered active duty at the age of twenty-one provides a good look at the typical age range of most officers. At age forty-one the officer is offered an annuity if he or she chooses to take it. If the military establishment would like to retain this officer's services, he or she

is also offered the prospect of service past the twenty

year point. Previous studies have shown that it is the

offering of a retirement annuity at an early age and not

necessarily the size of the annuity that contributes to

the employee's propensity to take early retirement.[7]

Since retention of the service member for a full thirty

year career is an objective of DOD,[8] it seems logical

that any substantial annuity pushing the service member

with a propensity to pursue a second career further to-

ward early retirement is in opposition to the DOD objec-

tive. This point is academic since the annuity has been

offered and it figures prominently in the future planning

of each career officer. The course chosen by DOD is to

reduce the size of the annuity in the hope of saving

money and staunching the flow of talent with between

twenty and thirty years experience. The reduction of the

annuity may have at least two effects. The first of these

may be to convince those officers with ten to twenty

years of service that the rules of the game had been

changed drastically and that the organization is inter-

ested only in saving money at their expense. This atti-

tude when combined with a propensity to retire early

could force the early retirement that the proposed changes

in the retirement system sought to prevent. The second

possible effect would be to convince the officers with

less than ten years service that the change in the retire-

ment system is the first of many and the attractiveness
of a liberal retirement system was only a myth. Thus the
retirement system would play little or no part in convinc-
ing these officers that a career in the military was an
attractive one. The combination of these two effects
could nullify the savings made in the retirement system
with corresponding expenses in the active duty personnel
account required to overcome the turbulence caused by
resignations and early retirements.

The group of officers who reach twenty years service
and are readily employable have to decide on their future
employment prospects and set their course accordingly.
There are many variables in this decision. If the offi-
cer expects to make flag rank and remain on active duty
past thirty years of service, then a military career be-
comes a feasible lifetime pursuit. If, however, the
officer expects to retire at thirty years service, the
age at retirement, the size of the annuity, and the size
and ages of the officer's family will probably not permit
his or her retirement from the work force. This is borne
out by a study conducted under the auspices of the Bureau
of Social Sciences Research, Inc. It was found that
seventy-one percent of the retired officers in the study
had entered the work force within eight months of retire-
ment and an additional thirteen percent of the sample
were full time students.[9] The same study states that the

most frequently given reason for early retirement was
that the officers felt that the inevitable transition
from the military to the civilian work force would be
accomplished better if done sooner.[10] Again, the pre-
sent retirement system encourages employable officers
to make the change sooner rather than later. A decrease
in cash flow under the proposed changes to the retire-
ment system will not deter the employable officer from
early retirement. The decision to retire early is based
largely on an economic need that is perceived for the
time span between forty-five and sixty-five years of
age. A reduced annuity only intensifies this need.

VII. CONCLUSIONS

The solution to the DOD dilemma of providing an attractive pay package, instilling the desire to remain on active duty for as long as possible, insuring that there are adequate opportunities for promotion, and reducing personnel and retirement costs is not easily solved or even discussed. The sheer magnitude of the problem when coupled with the restrictions of personnel acquisition that are peculiar to the military, make the application of solutions tested by industry almost impossible. Judging from the size of the augmented equivalent salaries shown in this analysis, the military services have been overgenerous in their fringe benefit package. Many officers will argue that a lieutenant colonel is worth $47,700 per year and it is not the intent of this study to dispute the point. It is merely pointed out that most lieutenant colonels, had they chosen other fields, would not be earning $47,700 per year in 1977.

Now that the career officer force has accepted the idea of liberal retirement benefits as their right it would be sheer folly for DOD to try to substantially modify the system. If the system is to be changed then it should be a clean break at some time in the future and it should apply only to those officers who come on active duty after the announcement is made. This will

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avoid breaking the psychological contract that has been offered and accepted between the military service and its career officer corps. It may cost more money in the retirement system but there are strong indications that it would save money in the active personnel cost account. In addition to changing the system of retirement compensation, DOD should think seriously about selling this part of the program to its noncareer designated officers and enlisted personnel. It would be very simple to add an item or two to the service member's monthly leave and earnings statement showing the monthly contribution to the service member's retirement fund and the total amount of the fund. *This simple reminder would be a strong at-*traction for continued service and would force the service member to fully consider the financial implications of leaving the military service.

Two isolated examples serve to show the dangers of violating the psychological contract that has been accepted by the career force. First, during fiscal year 1974 , Lieutenant General Leo Benade was interviewed by the Armed Forces Network, Europe, on the subject of the new proposed retirement system. The interview was aired on a Sunday afternoon and it was broken up by AFN's equivalent of commercials. One of the commercials was a public service announcement by "The Retirement Two," a song and soft shoe act that extolled the benefits of

military retirement. It seemed that someone at AFN thought that it would be a good idea to have "The Retirement Two" give their pitch about a guaranteed retirement after twenty years service just after Lieutenant General Benade told the interviewer that the military has never guaranteed anyone a retirement annuity after twenty years. The irony was not lost on the military personnel listening to the broadcast. The second example is the experience of the compensation review panels that have been meeting with service members at selected bases during the past few months. The members of these panels have expressed surprise at the deep-seated feeling about the present system and any changes that may be instituted.[11] Needless to say, the feelings toward the changes are negative.

There are many arguments for keeping the system as it is and many arguments for change. One thing about the idea of using a retirement system as a personnel management tool seems obvious. It is inefficient to place the entire work force under the same system if one is trying to get some members to leave and others to stay. It would be more reasonable to give everyone who was asked to leave some severance pay in the form of a lump sum payment or retirement annuity and to give everyone who was asked to stay the promise of some future severance pay and a bonus for remaining on active

duty. Paying the service member whom the organization
would like to keep an annuity if he or she leaves the
organization does not make sense. In short, the per-
sonnel management problem should be handled by personnel
managers and the compensation system should be flexible
enough to help the managers do their job. The managers
should not be forced to compete with the compensation
system.

One suggested method of handling officer retention is
to allow the personnel management system to make the reten-
tion decision every five years starting at the tenth year
in service. The decision would be to ask the officer to
remain on active duty with a guaranteed pension after
thirty years service and a cash bonus for serving the next
five years or to ask the officer to leave the service with
the offer of an annuity at age fifty-five or a lump sum
payment. Under this system the choice of remaining on
active duty would be shifted away from the individual, toward
the personnel management system. If the officer chose to
leave active duty after the offer had been made to remain
in the service, he or she would be entitled to an annuity
at age fifty-five with no lump sum payment option. The
benefits that are to be gained from this method include
being able to vary the bonus to compete with the civilian
labor market and spending personnel dollars only for those
officers that the organization truly wants to keep.

APPENDIX I

ACTUARIAL AND FINANCIAL DATA FOR THE

PROPOSED RETIREMENT SYSTEMS

TABLE A

LIFE EXPECTANCY OF NONDISABLED MALES

BASED UPON AGE IN 1977*

	ADDITIONAL YEARS OF LIFE	
AGE	MILITARY OFFICER	CIVILIAN
35	39.65	39.9
36	38.73	39.0
37	37.80	38.1
38	36.88	37.2
39	35.97	36.2
40	35.06	35.3
41	34.15	34.4
42	33.25	33.5
43	32.36	32.6
44	31.47	31.8
45	30.58	30.9
46	29.70	30.0
47	28.83	29.2
48	27.96	28.3
49	27.10	27.5
50	26.25	26.7
51	25.40	25.8
52	24.58	25.0
53	23.72	24.2
54	22.90	23.4
55	22.08	22.7
56	21.28	21.9
57	20.49	21.1
58	19.17	20.4
59	18.94	19.7

*Taken from a DOD study quoted in the Army Times, 29 Aug 1977, p. 8.

TABLE B

RETIREMENT AND FACTORS*

YRS ACTIVE DUTY UPON RETIREMENT	AGE UPON ENTRY ON ACTIVE DUTY								
	17	18	19	20	21	22	23	24	25
20	0.321	0.320	0.318	0.316	0.314	0.312	0.310	0.307	0.304
21	0.292	0.290	0.289	0.287	0.285	0.283	0.281	0.278	0.276
22	0.266	0.264	0.263	0.261	0.259	0.257	0.255	0.252	0.250
23	0.242	0.241	0.239	0.237	0.236	0.234	0.232	0.229	0.227
24	0.221	0.220	0.218	0.216	0.215	0.213	0.211	0.209	0.206
25	0.202	0.201	0.199	0.197	0.196	0.194	0.192	0.190	0.188
26	0.185	0.183	0.182	0.180	0.178	0.177	0.175	0.173	0.171
27	0.169	0.168	0.166	0.165	0.163	0.161	0.159	0.157	0.155
28	0.155	0.153	0.152	0.150	0.149	0.147	0.145	0.143	0.141
29	0.142	0.140	0.139	0.137	0.136	0.134	0.133	0.131	0.129
30	0.130	0.128	0.127	0.126	0.124	0.123	0.121	0.119	0.117

* The retirement fund factors computed in this table are based upon the premise that the funds accrue a tax free interest at the rate of 7 percent per annum. The formula is given below:

$$RFF = \frac{1 - (1 + i)^{-m}}{(1 + i)^{n} - 1}$$

i = interest rate = 7% per annum, tax free

m = longevity after retirement (Table A)

n = years of service upon retirement

TABLE C-1

YEARLY RETIREMENT FUND CONTRIBUTION EXPRESSED IN 1977 DOLLARS*

AGE UPON ENTRY ON ACTIVE DUTY = 17

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	3303	3817	4220	5512	6094	6562	7502	37
21	3155	3646	4031	5265	5820	6268	7165	38
22	3011	3538	4069	5025	5778	5981	6838	39
23	2864	3425	3871	4779	5495	5689	6504	40
24	2729	3264	3688	4554	5237	5421	6198	41
25	2598	3107	3512	4336	4986	5162	5901	42
26	2475	2960	3628	4130	4749	5267	5970	43
27	2348	2808	3441	3918	4505	4996	5663	44
28	2233	2670	3273	3726	4285	4752	5386	45
29	2119	2534	3106	3536	4066	4509	5111	46
30	2007	2400	2941	3349	3850	4271	4840	47

* This contribution is considered to be tax free and the fund is considered to be compounded at the rate of 7 percent per annum, tax free as indicated in Table A.

TABLE C-2

YEARLY RETIREMENT FUND CONTRIBUTION EXPRESSED IN 1977 DOLLARS*

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	O-4	O-5	O-6	O-7	O-8	O-9	O-10	AGE UPON RETIREMENT
20	3231	3734	4128	5392	5961	6419	7338	41
21	3079	3559	3934	5139	5681	6117	6993	42
22	2932	3506	3962	4892	5626	5824	6658	43
23	2793	3340	3775	4660	5359	5548	6343	44
24	2655	3175	3588	4430	5094	5274	6029	45
25	2521	3015	3407	4207	4838	5008	5726	46
26	2381	2848	3490	3974	4569	5068	5744	47
27	2264	2707	3319	3779	4345	4819	5462	48
28	2146	2567	3146	3582	4119	4568	5178	49
29	2029	2427	2975	3386	3894	4318	4895	50
30	1914	2289	2806	3194	3673	4073	4617	51

*This contribution is considered to be tax free and the fund is considered to be compounded at the rate of 7 percent per annum, tax free as indicated in Table B.

TABLE C-3

YEARLY RETIREMENT FUND CONTRIBUTION EXPRESSED IN 1977 DOLLARS*

AGE UPON ENTRY ON ACTIVE DUTY = 25

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	3128	3615	3996	5220	5771	6214	7104	45
21	2982	3446	3810	4976	5502	5924	6773	46
22	2830	3384	3825	4722	5430	5622	6427	47
23	2686	3212	3631	4483	5155	5336	6101	48
24	2544	3042	3438	4245	4881	5053	5777	49
25	2418	2892	3268	4035	4640	4804	5492	50
26	2287	2736	3353	3817	4390	4868	5518	51
27	2153	2575	3156	3593	4132	4583	5194	52
28	2031	2429	2978	3390	3898	4323	4900	53
29	1925	2302	2821	3212	3693	4096	4643	54
30	1806	2160	2647	3014	3465	3843	4356	55

TABLE D-1

EQUIVALENT RETIREMENT FUND ($000) IN 1977 DOLLARS

AGE UPON ENTRY ON ACTIVE DUTY = 17

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	135.4	156.5	173.0	226.0	249.8	269.0	307.5	37
21	141.5	163.6	180.9	236.2	261.1	281.2	321.5	38
22	147.6	173.4	199.4	246.3	283.2	293.1	335.1	39
23	153.0	183.0	206.9	255.4	293.6	304.0	347.5	40
24	158.8	189.9	214.6	264.9	304.7	315.4	360.6	41
25	164.3	196.5	222.1	274.2	315.4	326.5	373.2	42
26	170.0	203.3	249.2	283.6	326.1	361.7	410.0	43
27	174.9	209.2	256.3	291.8	335.5	372.1	421.8	44
28	180.2	215.4	264.1	300.7	345.8	383.5	434.6	45
29	185.1	221.3	271.3	308.9	355.2	393.8	446.4	46
30	189.6	226.7	277.8	316.3	363.7	403.4	457.2	47

TABLE D-2

EQUIVALENT RETIREMENT FUND ($000) IN 1977 DOLLARS

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	132.4	153.1	169.2	221.0	244.2	263.2	300.8	41
21	138.1	159.7	176.5	230.6	254.9	274.4	313.7	42
22	143.7	171.8	194.2	239.7	275.7	285.4	326.3	43
23	149.2	178.5	201.7	249.0	286.4	296.5	338.9	44
24	154.5	184.7	208.7	257.7	296.4	306.8	350.7	45
25	159.4	190.7	215.5	266.1	306.0	316.8	362.2	46
26	163.5	195.6	239.7	272.9	313.8	348.1	394.5	47
27	168.6	201.6	247.2	281.5	323.6	358.9	406.8	48
28	173.2	207.2	253.9	289.1	332.4	368.6	417.9	49
29	177.2	212.0	260.0	295.8	340.1	377.2	427.6	50
30	180.8	216.2	265.1	301.7	347.0	384.7	436.1	51

TABLE D-3

EQUIVALENT RETIREMENT FUND ($000) IN 1977 DOLLARS

AGE UPON ENTRY ON ACTIVE DUTY = 25

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	O-4	O-5	O-6	O-7	O-8	O-9	O-10	AGE UPON RETIREMENT
20	128.2	148.2	163.8	214.0	236.6	254.7	291.2	45
21	133.8	154.6	170.9	223.2	246.8	265.8	303.9	46
22	138.7	165.8	187.4	231.4	266.1	275.5	315.0	47
23	143.5	171.6	194.0	239.6	275.5	285.1	326.0	48
24	148.0	177.0	200.0	247.0	284.0	294.0	336.1	49
25	152.9	182.9	206.7	255.2	293.5	303.8	347.4	50
26	157.1	187.9	230.3	262.1	301.5	334.3	379.0	51
27	160.4	191.8	235.1	267.6	307.8	341.4	386.9	52
28	163.9	196.0	240.3	273.6	314.6	348.9	395.4	53
29	168.1	201.1	246.4	280.6	322.6	357.8	405.5	54
30	170.6	204.0	250.0	284.7	327.3	363.0	411.5	55

TABLE E-1

PRESENT VALUE IN 1977 OF THE EQUIVALENT RETIREMENT FUND* ($000)

AGE UPON ENTRY ON ACTIVE DUTY = 17

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	135.4	156.5	173.0	226.0	249.8	269.0	307.5	37
21	132.2	152.9	169.1	220.7	244.0	262.8	300.5	38
22	128.9	151.5	174.2	215.1	247.4	256.0	292.7	39
23	124.9	149.4	168.9	208.5	239.7	248.2	283.7	40
24	121.1	144.9	163.7	202.1	232.5	240.6	275.1	41
25	117.1	140.1	158.4	195.5	224.9	232.8	266.1	42
26	113.3	135.5	166.1	189.0	217.3	241.0	273.2	43
27	108.9	130.3	159.6	181.7	208.9	231.7	262.7	44
28	104.9	125.4	153.7	175.0	201.3	223.2	252.9	45
29	100.7	120.4	147.6	168.0	193.2	214.2	242.8	46
30	96.4	115.2	141.2	160.8	184.9	205.1	232.4	47

*Present value is assumed to be taken in the twentieth year of service.

TABLE E-2

PRESENT VALUE IN 1977 OF THE EQUIVALENT RETIREMENT FUND* ($000)

AGE UPON ENTRY ON ACTIVE DUTY = 21

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	132.4	153.1	169.2	221.0	244.4	263.2	300.8	41
21	129.1	149.3	165.0	215.5	238.2	256.4	293.2	42
22	125.5	150.1	169.6	209.4	240.8	249.3	285.0	43
23	121.8	145.7	164.6	203.3	233.8	242.0	276.6	44
24	117.9	140.9	159.2	196.6	226.1	234.1	267.5	45
25	113.6	136.0	153.6	189.7	218.2	225.9	258.2	46
26	108.9	130.3	159.7	181.8	209.1	232.0	262.9	47
27	105.0	125.5	153.9	175.3	201.5	223.5	253.3	48
28	100.8	120.6	147.8	168.3	193.5	214.5	243.2	49
29	96.4	115.3	141.4	160.9	185.0	205.2	232.6	50
30	91.9	109.9	134.8	153.4	176.4	195.6	221.7	51

*Present value is assumed to be taken in the twentieth year of service.

TABLE E-3

PRESENT VALUE IN 1977 OF THE EQUIVALENT RETIREMENT FUND* ($000)

AGE UPON ENTRY ON ACTIVE DUTY = 25

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	128.2	148.2	163.8	214.0	236.6	254.7	291.2	45
21	125.0	144.5	159.7	208.6	230.7	248.4	284.0	46
22	121.1	144.8	163.7	202.1	232.4	240.6	275.1	47
23	117.1	140.1	158.4	195.6	224.9	232.6	266.1	48
24	112.9	135.0	152.6	188.4	216.7	224.3	256.4	49
25	109.0	130.4	147.4	182.0	209.3	216.6	247.7	50
26	104.7	125.2	153.5	174.6	200.9	222.8	252.5	51
27	99.9	119.4	146.4	166.6	191.7	212.6	240.9	52
28	95.4	114.1	139.9	159.2	183.1	203.1	230.1	53
29	91.4	109.4	134.0	152.6	175.5	194.6	220.6	54
30	86.7	103.7	127.1	144.7	166.4	184.5	209.2	55

*Present value is assumed to be taken in the twentieth year of
 service.

TABLE F-1

HIGH ONE YEAR OPTION

YEARLY RETIREMENT FUND CONTRIBUTION EXPRESSED IN 1977 DOLLARS*

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	3193	3593	4071	5330	5881	6332	7237	41
21	3042	3530	3902	5080	5632	6062	6932	42
22	2900	3369	3730	4836	5295	5758	6271	43
23	2760	3301	3741	4607	5298	5483	6286	44
24	2625	3139	3555	4378	5036	5212	5973	45
25	2490	2980	3289	4158	4783	4952	5529	46
26	2352	2815	3212	3927	4517	4668	5289	47
27	2238	2676	3278	3736	4295	4762	5398	48
28	2120	2538	3110	3543	4073	4514	5119	49
29	2006	2340	2942	3346	3850	4268	4839	50
30	1891	2261	2776	3157	3632	4027	4564	51

*This contribution is considered to be tax free and the fund is
 considered to be compounded at the rate of 7 percent per annum,
 tax free, as indicated in Table B.

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TABLE F-2

HIGH ONE YEAR OPTION

EQUIVALENT RETIREMENT FUND ($000) IN 1977 DOLLARS

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	130.9	147.3	166.9	218.5	241.1	259.6	296.7	41
21	136.5	158.4	175.1	227.9	252.7	272.0	311.0	42
22	142.1	165.1	182.8	237.0	259.5	282.2	307.3	43
23	147.5	176.4	199.9	246.2	283.1	293.0	335.9	44
24	152.7	182.6	206.8	254.7	293.0	303.2	347.5	45
25	157.5	188.5	208.0	263.0	302.5	313.2	349.7	46
26	161.5	193.3	220.6	269.7	310.2	320.6	363.2	47
27	166.7	199.3	244.2	278.3	319.9	354.7	402.1	48
28	171.1	204.8	251.0	285.9	328.7	364.3	413.1	49
29	175.2	204.4	257.0	292.3	336.3	372.8	422.7	50
30	178.6	213.6	262.2	298.2	343.1	380.4	431.1	51

TABLE F-3

HIGH ONE YEAR OPTION

PRESENT VALUE IN 1977 OF THE EQUIVALENT RETIREMENT FUND* ($000)

AGE UPON ENTRY ON ACTIVE DUTY = 21

GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	130.9	147.3	166.9	218.5	241.1	259.6	296.7	41
21	127.6	148.0	163.6	213.0	236.2	254.2	290.7	42
22	124.1	144.2	159.7	207.0	226.7	246.5	268.4	43
23	120.4	144.0	163.2	201.0	231.1	239.2	274.2	44
24	116.5	139.3	157.8	194.3	223.5	231.3	265.1	45
25	112.3	134.4	148.3	187.5	215.7	223.3	249.3	46
26	107.6	128.8	147.0	179.7	206.7	213.6	242.0	47
27	103.8	124.1	152.1	173.3	199.2	220.9	250.4	48
28	99.6	119.2	146.1	166.4	191.3	212.0	240.4	49
29	95.3	114.0	139.8	159.0	182.9	202.8	229.9	50
30	90.8	108.6	133.3	151.6	174.4	193.4	219.2	51

*Present value is assumed to be taken in the twentieth year of service.

TABLE G-1

HIGH THREE YEAR OPTION

YEARLY RETIREMENT FUND CONTRIBUTION EXPRESSED IN 1977 DOLLARS*

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	3044	3386	3656	4657	5386	5731	6555	41
21	2928	3318	3568	4540	5271	5476	6264	42
22	2787	3190	3416	4280	5081	5268	6026	43
23	2655	3105	3357	4100	4963	5084	5816	44
24	2524	2986	3254	3897	4767	4833	5528	45
25	2397	2867	3240	3999	4574	4590	5250	46
26	2264	2708	3046	3777	4320	4335	4958	47
27	2153	2575	2995	3592	4108	4382	4994	48
28	2041	2441	2917	3405	3895	4189	4831	49
29	1929	2307	2828	3219	3682	4106	4653	50
30	1820	2176	2667	3036	3473	3873	4389	51

*This contribution is considered to be tax free and the fund is considered to be compounded at the rate of 7 percent per annum, tax free, as indicated in Table B.

TABLE G-2

HIGH THREE YEAR OPTION

EQUIVALENT RETIREMENT FUND ($000) IN 1977 DOLLARS

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	O-4	O-5	O-6	O-7	O-8	O-9	O-10	AGE UPON RETIREMENT
20	124.8	138.8	149.9	190.9	220.8	234.9	268.7	41
21	131.4	148.9	160.1	203.7	236.5	245.7	281.0	42
22	136.6	156.3	167.4	209.7	249.0	258.1	295.3	43
23	141.9	165.9	179.4	219.1	265.2	271.7	310.8	44
24	146.8	173.7	189.3	226.7	277.3	281.2	321.6	45
25	151.6	181.3	204.9	252.9	289.3	290.3	332.1	46
26	155.5	186.0	209.2	259.4	296.7	297.7	340.5	47
27	160.4	191.8	223.1	267.5	306.0	326.4	372.0	48
28	164.7	197.0	235.4	274.8	314.3	338.0	389.9	49
29	168.5	201.5	247.0	281.2	321.6	358.6	406.4	50
30	171.9	205.5	251.9	286.8	328.1	365.8	414.6	51

TABLE G-3

HIGH THREE YEAR OPTION

PRESENT VALUE IN 1977 OF THE EQUIVALENT RETIREMENT FUND* ($000)

AGE UPON ENTRY ON ACTIVE DUTY = 21

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	124.8	138.8	149.9	190.9	220.8	234.9	268.7	41
21	122.8	139.2	149.6	190.4	221.0	229.6	262.6	42
22	119.3	136.5	146.2	183.2	217.5	225.4	257.9	43
23	115.8	135.4	146.4	178.9	216.5	221.8	253.7	44
24	112.0	132.5	144.4	172.9	211.6	214.5	245.3	45
25	108.1	129.3	146.1	180.3	206.3	207.0	236.8	46
26	103.6	123.9	139.4	172.8	197.7	198.4	226.9	47
27	99.9	119.4	138.9	166.6	190.6	203.3	231.7	48
28	95.9	114.7	137.0	159.9	182.9	196.7	226.9	49
29	91.7	109.6	134.4	153.0	174.9	195.1	221.1	50
30	87.4	104.5	128.1	145.8	166.8	186.0	210.8	51

*Present value is assumed to be taken in the twentieth year of service.

TABLE H-1

FIFTEEN PERCENT REDUCTION IN RETIREMENT PAYMENTS OPTION

YEARLY RETIREMENT FUND CONTRIBUTION EXPRESSED IN 1977 DOLLARS*

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	2696	3116	3444	4499	4974	5356	6123	41
21	2634	3044	3365	4396	4860	5233	5983	42
22	2552	3052	3449	4259	4897	5070	5796	43
23	2470	2953	3338	4121	4739	4906	5609	44
24	2387	2855	3227	3984	4581	4743	5422	45
25	2326	2781	3143	3881	4463	4620	5282	46
26	2264	2707	3318	3778	4344	4818	5461	47
27	2202	2633	3228	3675	4226	4687	5312	48
28	2140	2560	3137	3572	4107	4555	5163	49
29	2058	2461	3017	3434	3949	4380	4964	50
30	1996	2387	2926	3331	3831	4249	4815	51

*This contribution is considered to be tax free and the fund is
 considered to be compounded at the rate of 7 percent per annum,
 tax free, as indicated in Table B.

TABLE H-2

FIFTEEN PERCENT REDUCTION IN RETIREMENT PAYMENTS OPTION

EQUIVALENT RETIREMENT FUND ($000) IN 1977 DOLLARS

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT								AGE UPON RETIREMENT
20	110.5	127.7	141.2	184.4	203.9	219.6	251.0	41
21	118.2	136.6	151.0	197.2	218.0	234.8	268.4	42
22	125.1	149.6	169.0	208.7	240.0	248.5	284.0	43
23	132.0	157.8	178.4	220.2	253.2	262.2	299.7	44
24	138.9	166.1	187.7	231.8	266.5	275.9	315.4	45
25	147.1	175.9	198.8	245.5	282.3	292.2	334.1	46
26	155.5	185.9	227.9	259.5	298.3	330.9	375.0	47
27	164.0	196.1	240.4	273.7	314.8	349.1	395.7	48
28	172.7	206.6	253.1	288.3	331.4	367.6	416.6	49
29	179.8	215.0	263.5	299.9	344.9	382.6	433.6	50
30	188.5	225.5	276.4	314.6	361.9	401.4	454.8	51

TABLE H-3

FIFTEEN PERCENT REDUCTION IN RETIREMENT PAYMENTS OPTION

PRESENT VALUE IN 1977 OF THE EQUIVALENT RETIREMENT FUND* ($000)

AGE UPON ENTRY ON ACTIVE DUTY = 21

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	110.5	127.7	141.2	184.4	203.9	219.6	251.0	41
21	110.5	127.7	141.1	184.3	203.7	219.4	250.8	42
22	109.3	130.7	147.6	182.3	209.6	217.0	248.1	43
23	107.8	128.8	145.6	179.7	206.7	214.0	244.6	44
24	106.0	126.7	143.2	176.8	203.3	210.5	240.6	45
25	104.9	125.4	141.7	175.0	201.3	208.3	238.2	46
26	103.6	123.9	151.9	172.9	198.8	220.5	249.9	47
27	102.1	122.1	149.7	170.4	196.0	217.4	246.4	48
28	100.5	120.2	147.3	167.8	192.9	213.9	242.5	49
29	97.8	116.9	143.3	163.1	187.6	208.1	235.8	50
30	95.8	114.6	140.5	159.9	184.0	204.1	231.2	51

*Present value is assumed to be taken in the twentieth year of service.

TABLE I-1

FIFTEEN PERCENT REDUCTION IN RETIREMENT PAYMENTS OPTION -

HIGH ONE YEAR FORMULA

YEARLY RETIREMENT FUND CONTRIBUTION EXPRESSED IN 1977 DOLLARS*

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	2666	2998	3397	4448	4907	5284	6039	41
21	2604	3020	3338	4346	4818	5186	5930	42
22	2523	2933	3247	4211	4609	5013	5459	43
23	2442	2919	3308	4074	4685	4849	5559	44
24	2360	2823	3197	3940	4529	4687	5372	45
25	2300	2747	3034	3837	4412	4568	5273	46
26	2238	2676	3054	3735	4295	4438	4891	47
27	2177	2603	3188	3633	4177	4632	5250	48
28	2080	2531	3101	3531	4061	4501	5104	49
29	2035	2373	2984	3395	3904	4329	4907	50
30	1973	2358	2895	3293	3788	4201	4760	51

*This contribution is considered to be tax free and the fund is
 considered to be compounded at the rate of 7 percent per annum,
 tax free, as indicated in Table B.

TABLE I-2

FIFTEEN PERCENT REDUCTION IN RETIREMENT PAYMENTS OPTION - HIGH
ONE YEAR FORMULA

EQUIVALENT RETIREMENT FUND ($000) IN 1977 DOLLARS

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	109.3	122.9	139.3	182.3	201.1	216.6	247.6	41
21	116.8	135.5	149.8	195.0	216.2	232.7	266.1	42
22	123.6	143.7	159.1	206.4	225.9	245.7	267.5	43
23	130.5	156.0	176.8	217.7	250.3	259.1	297.1	44
24	137.3	164.2	186.0	229.2	263.5	272.7	312.5	45
25	145.5	173.7	191.9	242.7	279.1	288.9	333.5	46
26	153.7	183.8	209.7	256.5	295.0	304.8	335.9	47
27	162.2	193.9	237.5	270.6	311.1	345.0	391.0	48
28	167.9	204.3	250.2	284.9	327.7	363.2	411.9	49
29	177.8	207.3	260.6	296.5	341.0	378.1	428.6	50
30	186.4	222.7	273.5	311.1	357.8	396.8	449.6	51

TABLE I-3

FIFTEEN PERCENT REDUCTION IN RETIREMENT OPTION

HIGH ONE YEAR FORMULA

PRESENT VALUE IN 1977 OF THE EQUIVALENT RETIREMENT FUND *($000)

AGE UPON ENTRY ON ACTIVE DUTY = 21

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	O-4	O-5	O-6	O-7	O-8	O-9	O-10	AGE UPON RETIREMENT
20	109.3	122.9	139.3	182.3	201.1	216.6	247.6	41
21	109.2	126.6	140.0	182.2	202.1	217.5	248.7	42
22	108.0	125.5	139.0	180.3	197.3	214.6	233.6	43
23	106.5	127.3	144.3	177.7	204.3	211.5	242.5	44
24	104.7	125.3	141.9	174.9	201.0	208.0	238.4	45
25	103.7	123.8	136.8	173.0	199.0	206.0	237.8	46
26	102.4	122.5	139.7	170.9	196.6	203.1	223.8	47
27	101.0	120.8	147.9	168.5	193.7	214.8	243.5	48
28	97.7	118.9	145.6	165.8	190.7	211.4	239.7	49
29	96.7	112.8	141.7	161.3	185.5	205.7	233.1	50
30	94.8	113.2	139.0	158.1	181.9	201.7	228.6	51

*Present value is assumed to be taken in the twentieth year of
 service.

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TABLE J-1

FIFTEEN PERCENT REDUCTION IN RETIREMENT PAYMENTS OPTION –
HIGH THREE YEAR FORMULA

YEARLY RETIREMENT FUND CONTRIBUTION EXPRESSED IN 1977 DOLLARS*

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	2540	2825	3050	3886	4494	4782	5470	41
21	2505	2839	3052	3884	4509	4685	5358	42
22	2426	2777	2974	3725	4423	4586	5245	43
23	2348	2746	2969	3625	4389	4496	5143	44
24	2270	2685	2926	3505	4287	4346	4971	45
25	2211	2644	2989	3689	4219	4234	4843	46
26	2152	2574	2896	3591	4107	4121	4714	47
27	2174	2600	3025	3628	4149	4426	5044	48
28	2110	2524	3017	3521	4027	4332	4995	49
29	1957	2340	2868	3265	3734	4164	4719	50
30	1898	2270	2782	3167	3622	4039	4578	51

*This contribution is considered to be tax free and the fund is
 considered to be compounded at the rate of 7 percent per annum,
 tax free, as indicated in Table B.

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TABLE J-2

FIFTEEN PERCENT REDUCTION IN RETIREMENT PAYMENTS OPTION

HIGH THREE YEAR FORMULA

EQUIVALENT RETIREMENT FUND ($000) IN 1977 DOLLARS

AGE UPON ENTRY ON ACTIVE DUTY = 21

ASSUMED RETIREMENT IN JULY 1977

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	O-4	O-5	O-6	O-7	O-8	O-9	O-10	AGE UPON RETIREMENT
20	104.1	115.8	125.0	159.3	184.2	196.0	224.2	41
21	112.4	127.3	136.9	174.3	202.3	210.2	240.4	42
22	118.9	136.1	145.7	182.5	216.8	224.7	257.0	43
23	125.5	146.7	158.7	193.7	234.5	240.2	274.8	44
24	132.1	156.2	170.2	203.9	249.4	252.8	289.2	45
25	139.8	167.2	189.1	233.3	266.8	267.8	306.3	46
26	147.8	176.8	198.9	246.6	282.1	283.0	323.7	47
27	161.9	193.7	225.3	270.2	309.0	329.7	375.7	48
28	170.3	203.7	243.5	284.1	325.0	349.6	403.1	49
29	170.9	204.4	250.5	285.2	326.2	363.7	412.2	50
30	179.3	214.4	262.8	299.2	342.1	381.5	432.4	51

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TABLE J-3

FIFTEEN PERCENT REDUCTION IN RETIREMENT PAYMENTS OPTION – HIGH
THREE YEAR FORMULA

PRESENT VALUE IN 1977 OF THE EQUIVALENT RETIREMENT FUND* ($000)

AGE UPON ENTRY ON ACTIVE DUTY = 21

PAY GRADE UPON RETIREMENT

YRS OF SERVICE UPON RETIREMENT	0-4	0-5	0-6	0-7	0-8	0-9	0-10	AGE UPON RETIREMENT
20	104.1	115.8	125.0	159.3	184.2	196.0	224.2	41
21	105.0	119.0	127.9	162.9	189.1	196.4	224.7	42
22	103.9	118.9	127.3	159.4	189.4	196.3	224.5	43
23	102.4	119.8	129.5	158.1	191.4	196.1	224.3	44
24	100.8	119.2	129.8	155.6	190.3	192.9	220.6	45
25	99.7	119.2	134.8	166.3	190.2	190.9	218.4	46
26	98.5	117.8	132.5	164.3	188.0	188.6	215.7	47
27	100.8	120.6	140.3	168.3	192.4	205.3	234.0	48
28	99.1	118.6	141.7	165.3	189.2	203.5	234.6	49
29	93.0	111.2	136.3	155.1	177.4	197.8	224.2	50
30	91.1	109.0	133.6	152.1	173.9	193.9	219.8	51

*Present value is assumed to be taken in the twentieth year of
service.

NOTES

SECTION I

1. Les Aspin, "The Burden of Generosity," <u>Harper's</u> Dec. 1976, p. 24.

2. U.S. Department of Commerce, Bureau of the Census, <u>Statistical Abstract of the United States</u>, 1976 (Washington: 1976), p. 432.

SECTION II

3. The Department of Defense would not like to keep every lieutenant on active duty for 20 years but it would like to have every officer to apply to stay on active duty for as long as possible. This situation would make the personnel job one of selecting the cream of the crop for each successive rank.

4. The 1976 tax tables are used with the military net pay and this net pay is considered to be the service member's sole source of income.

5. The interest is added in this instance because the idea of an equivalent retirement fund is predicated on the assumption that it will accrue tax free interest that is equal to the long term rate that the federal government must pay to borrow money. This rate is assumed to be 7% annually.

6. U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1976 (Washington: 1976), pp. 239-243.

SECTION VI

7. Office of Naval Research, <u>The Design and Analysis of an Expectancy Theory Model for Predicting Early Retirement</u> (Washington: U.S. Dept. of Defense, Office of Naval Research, 1974), pp. 10-11.

8. U.S. Dept. of Defense, <u>The Proposed New Military Nondisability Retirement System</u> (Washington: U. S. Government Printing Office, 1973), p. 7.

9. Bureau of Social Sciences Research, Inc., <u>The Employment of Retired Military Personnel</u>, BSSR:371 (Washington: 1966), p. xi.

10. <u>Ibid.</u>, p. 54.

SECTION VII

11. "House Begins Retirement Hearings," <u>Army</u> <u>Times</u>, 17 October 1977, p. 20:1.

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